

REMARKS

This is a full and timely response to the outstanding non-final Office Action mailed February 20, 2007. The Applicant wishes to thank the Examiner for the thorough review of the previously submitted Amendment. In response thereto, the Applicant's arguments were fully considered and were found to be persuasive. The previous rejection has been withdrawn and the finality of the Office Action was also withdrawn.

Claims 1, and 3-20 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Siddiqui in view of Sparkes. The Office Action states that with respect to claims 1, 13, and 15, Siddiqui discloses an osteosynthesis and compression screw for coaptation of small bone fragments, the screw being formed by a single longitudinal body have a longitudinal axis, and comprising a proximal position formed by a screw head provided with an outside thread, the proximal portion being of diameter greater than the diameter of the remainder of the screw, and intermediate portion having no thread; and a distal portion have provided with an outside threads; as best seen in FIG. 1; the terminal zero of the distal portion is provided with preparation means for preparing a housing in the bone fragment for receiving the intermediate and distal portions of the screw.

It is noted that Siddiqui did not teach each of the screw head and the distal portion including at least one helical groove, firstly extending over the entire axial length of its threads and secondly being formed through each thread in such a manner to form tapping means, as claimed by Applicant. The Office Action continues that; however, in

the screw field, Sparkes evidences the use of a screw with at least one helical groove, firstly extending over the entire axial length of its threads, and secondly being formed through each thread in such a manner to form tapping means to have exceptionally easy starting and insertion ability and to facilitate counter-sinking, and also reducing the danger of splitting the material being used.

In view of these references, the Office takes the position that it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Siddiqui as taught by Sparkes to have exceptionally easy starting and insertion ability and to facilitate counter-sinking, and also reducing the danger of splitting the small bone fragments.

The Office Action continues that with respect to claims 3-12, 14, and 16-20, the above combination of references teaches all the limitations, such as, the angle being thirty degrees, the groove being constant, the variation of each groove, the increases of the grooves towards the terminal zone of the screw, the tooth extending substantially axially, the central longitudinal bore.

The above-stated rejection is respectfully traversed. Initially, the Applicant incorporates herein all the comments made concerning the Siddiqui reference from the previous amendment. It is also apparent that the analysis set out in the Office Action is clearly an ex post facto approach and is based purely on hindsight reconstruction to arrive at the Applicant's claimed device. It is important to note the mandate set out by 35 U.S.C. 103(a):

“a patent may not be obtained ... if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. “

A person skilled in the art (that is to say a person working in the field of surgical bone screws) and facing a problem concerning bone compression screws, would not consider the teaching of a document which is merely and entirely directed to wood screws.

The structures and properties of bone and wood are completely different. Wood screws are not suitable for being screwed into bone. Moreover, bone screws are intended to be implanted in the human body for therapeutic purposes; in other words, bone screws must perform their function perfectly, at the first attempt, and without damaging tissues, in a very constraining environment. This is obviously not the case for wood screws. This is clearly documented by column 3, line 16-21 of Siddiqui. This paragraph gives a long list of materials that are considered by the skilled person as being structurally akin to bone. These “friable and/or frangible” materials do not include wood or any ligneous material. Hence, it is without question that a person skilled in the art would not consider a teaching that relates to wood screws.

There are additional considerations and differences. Sparkes teaches to implement a spiral flute which extends the full length of the screw as shown in the figures and described in column 2, line 1-ff. Therefore, implementing the flute of Sparkes and the screw of Siddiqui would lead to a screw with even its smooth

intermediate portion equipped with a flute. In a compression screw, the smooth intermediate portion is the portion that is subject to the highest mechanical stresses. Hence, the skilled person would be deterred of taking into account the teaching of Sparkes, since it would lead to a mechanical weakening of the screw. Weakening of a screw that is designed to be, and must be, as strong as possible, given its function and environment, is certainly not obvious.

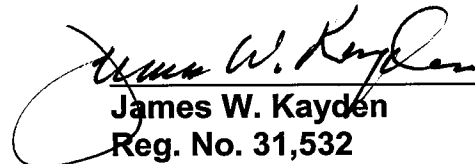
Even if the skilled person takes into account the teaching of Sparkes, he will only give a spiral shape to the straight flutes 29 and 35, but he will not lengthen them, in order to avoid weakening of the screw. In other words, the combination of Siddiqui and Sparkes would lead to a screw with flutes as short as those of Siddiqui.

It is of major importance that all the advantages mentioned by the Office Action, namely easy starting, insertion ability and the facilitation of counter-sinking, are already obtained with the Siddiqui screw, since they are not related to the spiral shape of the flutes but only with the simple presence of the flutes, even if the latter are straight. Therefore, the skilled person would have no reason to search in Sparkes a solution to a problem that does not exist.

CONCLUSION

It is for these and other reasons enunciated earlier that it is believed that all of the claims remaining in the Application are in condition for allowance. Early and favorable action in this regard is hereby respectfully requested. Should there be any minor informalities remaining, or If, in the opinion of the Examiner, a telephone conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (770) 933-9500.

Respectfully submitted,


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